

Lockheed Martin Idaho Technologies Company**INTERDEPARTMENTAL COMMUNICATION**

Date: July 26, 1999

To: D. J. Kuhns MS 3920 6-8226

From: T. E. Sivill MS 3655 6-9273

Subject: WAG 1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE - TES-05-99

Reference: Transmittal to T. S. Green from T. E. Sivill, WAG OU 1-10 RI/FS Remedial Alternatives, TES-3-97, dated September 8, 1997.

Cost Estimating has provided a Planning Cost Estimate for the project referenced above. Costs are summarized in a similar format to the RI/FS estimate for comparison purposes.

Costs are based on information and guidance provided by program personnel. The attached recapitulation sheet outlines the general scope information and identifies the major scope and cost deltas from the FS cost estimate referenced above. Costs have been presented in FY 99 dollars, escalated dollars and discounted to reflect a net present value for comparison purposes.

Should you have any questions, please contact Terry Sivill, ID-TES or 526-9273.


TES

Attachments


cc: B. J. Broomfield MS 3915

T. E. Sivill File

Estimate File 6950-4



COST ESTIMATE SUPPORT DATA RECAPITULATION

Project Title: WAG 1 OU1-10 SITE V9/18 DRAFT ROD ESTIMATE
Estimator: TES/KLS
Date: 7-26-99
Estimate Type: PLANNING
File: 6950-4
Approved By: 

I. **SCOPE OF WORK:** *Brief description of the proposed project.*

Prepare a Rough Order of Magnitude Planning Cost Estimate for the above mentioned project. The estimate focuses on TAN WAG 1 - TSF-09/18 (V-Tanks), Alternative 4 Vittrification Option. This estimate provides an update to the RI/FS Cost Estimate Site, dated 9/8/97, and incorporates new scoping requirements provided to cost estimating the week of 5-17-99 thru 5-20-99.

II. **BASIS OF THE ESTIMATE:** *Drawings, Design Report, Engineers Notes and/or other documentation upon which the estimate is originated.*

The WAG 1 OU1-10 RI/FS REMEDIAL ALTERNATIVES Cost Estimate, dated 9-8-97.

Scoping and assumptions outline provided by the ER project engineer.

Coordination meeting with WAG 1 program management team.

III. **ASSUMPTIONS:** *Conditions statements accepted or supposed true without proof of demonstration. An assumption has a direct impact on total estimated cost.*

The general project assumptions and remedial action alternatives general descriptions outlined in the RI/FS estimate still apply. Listed below are the specific assumptions addressing the scoping requirements as currently defined.

Total Capital Costs in current year dollars, (before contingency), reflects a net increase of \$3,479,000. Listed below are the scope/cost deltas:

1. Program Management cost remains the same as stated in the RI/FS.
2. Remedial Action (RA) Documentation, (RD/RA SOW and RA Work-plan), Remedial Action Reports, WAG initial 5 year review and RD documentation including the Health and Safety Plan, Sample and Analysis Plan and Pre-final Inspection Report have been revised. Costs are assumed similar to those utilized for the WAG-5 vittrification option documentation. Costs reflect a net increase of \$187,000.

COST ESTIMATE SUPPORT DATA RECAPITULATION

- Continued -

Project Title: WAG 1 OU1-10 SITE V9/18 DRAFT ROD ESTIMATE

File: 6950-4

Page 2

3. Remedial Design Activities:

- Initial Review of Deed Restrictions has been included as new scope. It is assumed with the new requirements for out-year (100 years) surveillance and monitoring a review of the current deed restrictions will need to be included. Costs are assumed similar to those utilized for the WAG-5 vitrification option documentation. Costs reflect a net increase of \$32,000.
- The Title Design construction document package in the RI/FS estimate included design of site preparation, temporary utilities (Primarily electrical power), temporary lay-down and decon areas for the ISV subcontractor. The current estimate includes RI/FS estimate items plus the revised scope as listed below:
 - Design of a refractory and/or thermal barrier protecting nearby structures.
 - Design of shoring and piling system around the 80' x 50' site protecting existing facility foundation and footings from subsidence during installation of the thermal barrier system.
 - Design of tank vent system in conjunction with the ISV subcontractor.
 - Assist the ISV subcontractor in determining the placement of starter planes for initial melting operation.
 - Removal, treatment/disposal of contaminated soils and existing underground piping systems.
 - Design of soil cap and monitoring wells required for out-year surveillance and monitoring activities.
- Costs reflect a net increase of \$165,000.

4. Remedial Action – Construction Subcontract Activities:

- Site characterization scope includes additional soil/tank samples. Costs reflect a net increase of \$100,000.
- The construction/remedial action subcontracts included in the RI/FS estimate included site-work and utilities, ISV remedial action subcontract and LMITCO support during mobilization, treatment and demobilization of treatment. The current estimate includes the RI/FS items plus the revised scope as listed below:
 - Construction of shoring and piling system around the 80' x 50' site protecting existing facility
 - Construction of a refractory and/or thermal barrier to protect nearby structures along both sides of the tanks.
 - Construction of tank vent system in conjunction with the ISV subcontractor
 - Assist the ISV subcontractor in determining the placement of starter planes for initial melting operation.
 - Removal, treatment/disposal of contaminated soils and existing underground piping systems.
 - ISV includes and additional top down melt of contaminated soils.
 - Construction of a soil cap and monitoring wells required for out-year surveillance and monitoring activities. Cap is assumed to be a 6 ft deep soils cap with natural vegetation and four monitoring wells similar to the WAG-5 FS.
 - Scope includes secondary waste treatment/disposal not addressed in the FS scope/cost.
- Costs reflect a net increase of \$2,577,000.

COST ESTIMATE SUPPORT DATA RECAPITULATION

- Continued -

Project Title: WAG 1 OU1-10 SITE V9/18 DRAFT ROD ESTIMATE
File: 6950-4

Page 3

5. Remedial Action – The Project/Construction Management and RA Operations Oversight Activities:
 - For the above mentioned construction and operations activities project/construction management and operations oversight costs reflect a net increase of \$418,000.
6. Operations assumes added scope including:
 - Added Program Management for a 100 Year duration. Costs reflect a net increase of \$254,000.
 - Added 5-year review for a 100 year duration (Previously referred to as Annual Operations and Maintenance Reports). Costs reflect a net increase of \$822,000.
 - New caretaker/maintenance of the cap, fencing and monitoring wells for a 100 year duration. Costs reflect a net increase of \$2,041,000.
 - Surveillance and Monitoring costs in the RI/FS estimate included minimal costs sampling and analysis, 5-year reviews and inspection/maintenance of fencing around site. The majority of these costs are now reflected in the current estimate under caretaker/ maintenance activities. Due to the shifting of dollars to caretaker inspections and maintenance costs reflect a decrease of (-\$330,000)
 - Total Operations Cost in current year dollars, (without contingency), reflects a net increase of \$3,287,000.

IV. **CONTINGENCY GUIDELINE IMPLEMENTATION:** *The percentage used for contingency as determined by the contingency allowance guidelines can be altered to reflect the type of construction and conditions that may impact the total estimated cost.*

Contingency has been included at the same 30% as the RI/FS estimate. Due to the added scope and cost items the 30% factor on the Capital Dollars increased contingency by approximately \$1,000,000 and Operating Dollars increased by approximately \$990,000.

V. **OTHER COMMENTS/CONCERNS SPECIFIC TO THE ESTIMATE**

The estimate has been prepared with less than 5% scope definition.

The refractory/thermal barrier was discussed in general terms with the ISV vendor. Costs have been included for a 6" thick refractory wall with a 12" thick gravel passive ventilation barrier located directly behind the refractory wall. Both are assumed installed on both the east and west side of the tanks down to a depth of 20 ft.

Costs included for treatment/disposal of secondary waste has been included as an allowance. No vendor quotes were available at the time of issue.

SUMMARY COST ESTIMATE SHEET

Rev 10-98

Project WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATEWASTE SITE V-9/18 - VITRIFICATION OPTION

Type of Est.

Planning

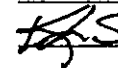
File No.

6950-4

Date:

07/26/99Location TAN - INEEL

Checked By:

Requester D. J. KUHNS

ACCT. NO.	DESCRIPTION	VITRIFICATION ALT. 4	
	CAPITAL COST SUBTOTAL	11,511,991	
	Contingency @ 30%	3,453,597	
	TOTAL CAPITAL COST IN FY97 DOLLARS	14,965,588	
	TOTAL CAPITAL COST IN ESCALATED DOLLARS	17,005,584	
	TOTAL CAPITAL COST IN NET PRESENT VALUE	13,445,948	
	O&M COST SUBTOTAL	4,880,200	
	Contingency @ 30%	1,464,060	
	TOTAL O&M COST IN FY97 DOLLARS	6,344,260	
	TOTAL O&M COST IN ESCALATED DOLLARS	42,204,878	
	TOTAL O&M COST IN NET PRESENT VALUE	2,458,020	
	TOTAL PROJECT COST IN NET PRESENT VALUE	15,903,968	

SUMMARY OF DETAILED COST ESTIMATE

Project WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE
WASTE SITE V-9/18 - VITRIFICATION OPTION
 Location TAN - INEEL
 Requester D. J. KUHNS

Type of Est. Planning File No. 6950-4 Date 07/26/99
 Source (E) Eng. Est. Prep'd By TES/KLS
 (V) Vendor
 (P) Pur. Order

ACCT. NO.	DESCRIPTION	ALTERNATIVE 4 VITRIFICATION				
ER1220	FFA/CO Management and Oversight					
	Program Management	500,000				
	RA Document Preparation					
	RD/RA SOW	54,000				
	RA Workplan	63,000				
	Packaging, Shipping, Trans. Documentation	N/A				
	Remedial Action Report	48,000				
	WAG-Wide RA - 5 Yr. Reviews	141,000				
	RD Documentation Preparation					
	Safety Analysis Documentation (ASA & HSP)	76,500				
	Sampling and Analysis Plan	54,000				
	Pre-Final Inspection Report	7,500				
ER1210	Remedial Design					
	Initial Review of Deed Restrictions	32,000				
	Title Design Construction Document Package	221,720				
ER1230	Remedial Action - Construction Subcontract					
	Site Characterization	100,000				
	Construction Subcontract	9,608,491				
	Project/Construction Management	607,780				
	TOTAL CAPITAL COST	11,511,991				
ER1230	Remedial Action - Operations (100 Year Duration)					
	Program Management	1,692,000				
	WAG-Wide RA - 5 Yr. Review For 100 Years	897,000				
	Added Institutional Controls - 5 Yr. Review For 100 Years	N/A				
	Continued/New Construction Caretaker/Maintenance	2,041,200				
	Operations, Maintenance, Materials, and Disposal	N/A				
ER2000	D&D of Facilities	N/A				
ER1310	Surveillance and Monitoring	250,000				
	TOTAL OPERATIONS COST (100 YEARS)	4,880,200				

Project WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - VITRIFICATION OPTION

TAN - INEEL

D. J. KUHN

Type of Est.	Planning
1. <u>Operating</u>	1. <u>Operating</u>
2. <u>Capital</u>	2. <u>Capital</u>
3. <u>Research and Development</u>	3. <u>Research and Development</u>
4. <u>Other</u>	4. <u>Other</u>

File No. 6950-4

Date 07/26/99

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Rev 10-96

Project

WASTE SITE V-9/18 - VITRIFICATION OPTION

TAN - INEEL

D. J. KUHNIS

Type of Est.	Planning
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File No. 6950-4

Date 07/26/99

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DETAILED COST ESTIMATE (CONT.SHEET)

Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - VITRIFICATION OPTION

TAN - INEEL

D. J. KUHN

Type of Est.

Planning

File No.

6950-4

Date _____

07/26/99

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Project WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - VYTRIFICATION OPTION

TAN - INEEL

D. J. KUHN

Type of Est.

Planning

File No. 6950-4

Date 07/26/99

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Rev 10-96

Project

WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE

WASTE SITE V-9/18 - VITRIFICATION OPTION

TAN - INEEL

D. J. KUHNIS

Type of Est.

Planning

File No.

6950-4

Data

07/26/99

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DETAILED COST ESTIMATE (CONT.SHEET)

Rev 10-96

Page 7 of 8

Project WAG-1 OU 1-10 SITE V9/18 DRAFT ROD COST ESTIMATE
WASTE SITE V-9/18 - VITRIFICATION OPTION
TAN - INEEL
D. J. KUHS

Type of Est. Planning File No. 6950-4 Date 07/26/99

ACCT. NO.	DESCRIPTION	E.V, P,H	MAT'L UNIT	MAT'L UT. COST	UNIT LAB. HRS	TOTAL LAB. HRS.	LABOR RATE	LABOR COST	MAT'L COST	OTHER COST	TOTAL COST
	Remedial Action - Operations (100 Year Duration)										
	Program Management										
	Coordination/Oversight of Technical Support		0.5 fte		200	100	75	7,500			7,500
	Coordination with Agency Participants		0.5 fte		80	40	75	3,000			3,000
	Cost and Schedule Control		0.5 fte		59	30	65	1,924			1,924
	Ensure Compliance of Gov't Regulation		0.5 fte		32	16	70	1,120			1,120
	Reviews		0.5 fte		32	16	65	1,040			1,040
	Audit Preparation and Coordination		0.5 fte		32	16	65	1,040			1,040
	Annual Operations and Maintenance Reports		0.5 fte		40	20	65	1,300			1,300
	Total Cost (Per Year)					238					16,920
	Program Management Costs - 100 Year Duration		100 yrs	16,920					1,692,000		1,692,000
	WAG-Wide RA 5 Yr. Review - (Cost Per Each, Required (1) FTE For Years 2 thru 5; (1) FTE in (5) Yr. Increments for 6 thru 95)										
	RA Report Preparation		23 yrs		360	8,280	75	621,000			621,000
	Reviews and Comment Resolution		23 yrs		160	3,680	75	276,000			276,000
	WAG-Wide RA 5 Yr. Reviews For 100 Years										897,000
	Remedial Design										
	Added Institutional Controls - Assumed No Further Controls Required Other Than the Reviews Stated Above.										
	Total Added Institutional Controls - 100 Year Duration										NA
	Caretaker/Maintenance										
	Caretaker		0.1 fte		1,880	188	75	14,100			14,100
	Cap Maintenance		7800 sf	0.04					312		312
	Area/Access Materials and Repair		12 mos.	500					6,000		6,000
	Caretaker/Maintenance Cost Per Year										20,412
	Caretaker Cost - 100 Year Duration		100 yrs	20,412					2,041,200		2,041,200

Rev 10-96

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